

LIFE HISTORIES OF NORTH AMERICAN GEOMETRIDAE. — V.

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Gonodontis hypochraria H.-S. I have described this larva previously (Ent. News, V, 61), but the present description is more full and exact.

Egg. Regularly elliptical from upper aspect, one end depressed, wedge-shaped from side aspect, the thicker end obscurely truncate, consisting only of a slight flattening; surface neatly hexagonally reticular, the reticulations distinct and raised, very narrow, but with rounded tubercles at the angles as large as one third the diameter of a cell area. On the side taking the light, the tubercles are dark, pale on the dark side, and on the edge view plainly protruding. The egg is well rounded, without sharp angles; color shining greenish white, opaque; later opaque pink and finally gray-black. Size $.8 \times .6 \times .5$ mm. Hatches in 10 days.

Stage I. Head large, round, dark brown on vertex, face strongly mottled with white; width about .25 mm. Joints 5 to 9 enlarged a little centrally by small blunt processes bearing tubercle iii; otherwise smooth. Ground color white; all of the thorax, joints 10 to 12 dorsally and large diamond shaped dorsal patches on joints 5 to 9 dark vinous brown, joined by a narrow dorsal line and a finer subdorsal one; feet dark; venter with large spots connected like the dorsal ones and joining those somewhat narrowly on the sides. Setae small, stiff, dark, not perceptibly glandular; tubercles obsolete. The larvae progress slowly and are rather sluggish. Later the pale spaces are cut by several dusky lines, being resolved into a number of white spots. A dorsal pair on the anterior edge of the segment are a little elevated while the brown elevations are less conspicuous. Anal plate edged with pale.

Stage II. Head thin, flat before, disk-like, shallowly bilobed; red-brown, spotted with

white; four spots in front cover most of the surface, clypeus pale; two spots on the narrow sides; width about .5 mm. Body essentially as before, the lateral blunt, brown processes present on joints 5 to 9, segments banded irregularly centrally with red-brown, connected by a number of indistinct brown lines; interspaces broadly luteous, with many small bright white spots. On joints 8 to 13 the brown dorsal band predominates and the segmental bands are fainter, being absent on joints 10 to 13. Thorax all dark above, feet pale, abdominal feet dark. Brown ventral stripe rather distinct. Later the brown color pales and only the low processes (post stigmal) remain dark.

Stage III. Head rounded, squarish, scarcely bilobed, half as thick as high, whitish, dotted with brown, forming a border about the face which has the clypeus and four spots confluent therewith whitish; vertex and sides traversed by three brown pulverulent bands on each lobe; width about 1 mm. Body cylindrical, smooth, the thorax contracted, bent backward at joint 5, all the feet appressed, the thoracic segments compressed laterally. Greenish brown, not dark, except around the very slight elevation behind and above the spiracle (tubercle iii) and in three spots subventrally in an oblique row and very slight dashes in the center of the segments. A dark dorsal line and mark on the foot of joint 10 in front, subventrally on joints 11 to 13; thorax darkly shaded. A number of very fine dotted white, longitudinal lines, viz.: addorsal, obscure; subdorsal, more distinct and on joints 6, 7 and 8 anteriorly breaking up into two or three rather large white spots, the most anterior of which is placed inward, next the dorsal line; there are three other lines on the sides and three subventrally, the last forming a

double ventral line. The lower two of the side lines are somewhat broken by large white spots on the anterior portion of joints 6 and 7. Lines lost on the thorax. Other examples are more heavily shaded with dark brown so that the lines are broken, especially centrally on the segments.

Stage IV. Head flat before, sides and vertex continuous and of even width, a slight shallow notch. Face with an irregular pale mark composed of a white clypeus and four confluent dots, surrounded by a dark brown border, dotted with white; sides and vertex white, mottled with brown, especially in the center of the side posteriorly and in vertical notch; width about 1.5 mm. Body cylindrical with slight subventral ridge, thorax somewhat smaller; anal plate large, triangular, not cornified; tubercle iii in a slightly elevated black spot. Brown, finely streaked longitudinally with white, intermixed with a few black dots. An obscurely double, blackish dorsal line, each side of which on joints 6, 7 and 8 are two white dots, the anterior one nearest the line. Thorax subventrally and a dot before the spiracle on joint 5, an oblique subventral dash on joints 5 to 10 and joints 11 to 13 subventrally black. All rather obscurely marked, brown, resembling bark. During the stage the color passes to an almost whitish brown making the white linings obscure and the black dots prominent.

Stage V. Head as before, the sides and vertex pale, faintly marbled with pale luteous; width about 2 mm. Body straight, cylindrical, rather short and robust, smaller than the head; a slight dorsal elevation on joint 12 composed of the prominent tubercles i; anal plate and leg shields large. Pale wood brown, speckled with black; i. e. the tubercles and some irregular dots, besides a narrow double dorsal line, black. The line is pulverulent and fainter in the incisures. A similar, browner ventral line. Feet pale; a dark subventral shade on thorax. Setae obscure; dorsal tubercles a little prominent.

Stage VI. Head square, face flat, rounded,

slightly narrowed above; broadly, shallowly bilobed, equal in thickness above and below; clypeus high, the paraclypeal pieces reaching the vertical notch; width 2.8 mm. Color pale wood brown, face strongly mottled with dark brown around the margin; clypeus and an area on either side pale; sides faintly marbled with pale brown, most distinctly on vertex. Body cylindrical, rather robust, neck slightly narrowed; smooth, tubercles i on joint 12 produced; subventral fold slightly prominent, waved; anal shields large, rounded. Thoracic feet rather small, equal. Pale wood brown, faintly mottled with reddish; a narrow, geminate, pulverulent, black dorsal line, slightly broadening into a shade on joints 12 and 13. Medio-ventral line pale and reddish; a broad, double, diffuse, shaded subventral black band. Tubercles and several dots in lateral region black, spiracles black ringed; feet slightly lined with black at base. Variation not marked. The lateral dots may be faint or distinct, rarely connected into a broad lateral shade, bordered above by a waved subdorsal line and reaching over lateral region to below subventral fold. The usual form is pale brown with single dorsal and paired subventral blackish bands; tubercles i of joint 12 conically produced.

Cocoon a coarse net of brown silk between leaves. The larvae refused oak, but fed readily on persimmon and apple. Found at Brookhaven, Long Island, N. Y., eggs June 10th, mature larvae August 10th.

A NEW MELOID BEETLE PARASITIC ON ANTHOPHORA.

Leonia neomexicana, n. sp.—Length about 11 millim. Black, including legs and antennae; elytra fulvous. Form of *L. rileyi*, with a rather sparse black pubescence; mandibles stout, curved, entire, blunt at tip; antennae stout, 10-jointed, first joint campanulate, shorter and more abruptly swollen